

LETTER TO THE EDITORS ABOUT:

A retrospective comparison between transrectal and transperineal prostate biopsy in the detection of prostate cancer*Arch Ital Urol Androl* 2017; 89:55-9.**The eternal enigma in prostatic biopsy access route****KEY WORDS:** Prostate Biopsy; Transperineal; Transrectal; Detection rate.

Dear Editors,

We read with interest the article by *Di Franco et al.* (1). The introduction of prostatic magnetic resonance and the relative fusion-biopsy have not yet allowed the expected improvements in prostate biopsy. To our knowledge, there are no works that demonstrate the superiority of fusion techniques on the remaining ultrasound guided prostate biopsies that are still the widely used in the diagnosis of prostate cancer. Furthermore, these technologies are expensive exams and they are not yet available in all centers, especially in those minors. We work at a “minor” center and we always keep in mind that the goal of prostatic biopsy is the diagnosis and the staging of prostatic neoplasms. However, it remains uncertain which of the two techniques, *transperineal* (TP) or *transrectal* (TR), is superior in terms of detection rate during first biopsy setting. Several studies have compared the prostate cancer detection rate but TR and TP access route in prostatic gland sampling seems to be equivalent in terms of efficiency and complications, as reported by *Shen PF et al.* (2), despite several methodological limitations recognized in their work. The results reported by *Di Franco CA et al.* represent the real life experience of most urologists that perform the PB based on their own training experience and available technical devices. From an historical viewpoint, the TP route has been the first one to be used to reach the prostate, both for diagnostic and therapeutic purposes. To date, because it seems to be more invasive and difficult, the TP route is less used worldwide than the TR one (2). Theoretically, the TP approach should detect more prostate cancer than the TR way because the cores of the TP approach are directed longitudinally to the peripheral zone and the anterior part of the prostate (4). The results reported by *Di Franco et al.* seems to confirm these considerations. However, our real life experience differ from the conclusions reached in their work. We recently conducted a prospective evaluation of 352 patients who underwent their first prostate biopsy because of a suspicious of prostate cancer (elevated prostate specific antigen (PSA) and/or abnormal digital rectal examination and/or abnormal findings on transrectal prostatic ultrasound). Patients was randomized as following. A total of 187 patients (Group A) underwent a prostatic biopsy with a transperineal approach in a lithotomic position, using a biplane probe (8818 BK Medical, Denmark) and a fan technique with a single perineal median access (5). The remnants 165 patients (Group B) underwent a transrectal ultrasound guided prostate biopsy in a left lateral position, using a end fire probe configuration (8818 BK Medical, Denmark) and a sagittal technique. The bioptic prostatic mapping was performed with a 12-core scheme sec. *Gore* (3) by a single experienced operator and the histopathologic evaluation was performed by a single dedicated uro-pathologist. Statistical evaluations were made with a T Student test ($p < 0.005$). Group A and Group B was similar in term of mean patient age (67.9 years and 67 years respectively), mean total PSA (12.1 ng/ml vs 12 ng/ml) and digital rectal examination positivity (22% vs 29%). The global cancer detection rate was 33,69% (63/187) in the transperineal prostate biopsy group and 48,48 % (80/165) in the transrectal approach ($p = 0.0047$). No significant statistical differences were found in the complications rates between the two groups. Statistical evaluation of site of tumor localization reveal only a trend to statistical significance in apical site tumors diagnosed with the TR approach versus the TP technique. The TR approach had a better diagnostic accuracy than TP technique in case of PSA < 4 ng/ml, intermediate prostate volume (30 and 50 ml), normal digital rectal examination without any relationship with the patient age. In our experience, two aspect may explain the difference between the two group in term of global detection rate. First, we usually perform transrectal biopsy with a sagittal technique that simulates the transperineal way of needle incidence with the prostatic gland. The lateral and anterior gland portions may be sampled more accurately. Second, our transperineal approach consists in a single perineal median access that can make more difficult the gland sampling between the two lobes. However, there was no significant difference in core positivity rate at the peripheral zone, medium gland, apex or any other site such as reported in many randomized clinical trials (2). Unlike the conclusions reported by *Di Franco et al.*, in our experience we found a statistically significant difference between the TR and TP approach, at the first biopsy setting, in term of global cancer detection rate. No differences were found in terms of complications. Moreover, our data suggest that TR approach had a better diagnostic accuracy than TP technique in case of PSA < 4 ng/ml, prostate volume 30-50 ml, normal digital rectal examination without any relationship with the patient age. The further step of the statistical evaluation of our data will be the definition of the possibility that the TR biopsy determine a better staging of prostate cancer than TP approach as first procedure.

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